

Application No. 10/665,261
Docket No. US-P1732F

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AMENDMENTS TO THE CLAIMS:

Please cancel claims 2-6 without prejudice or disclaimer.

1. (Currently Amended) A driving force distribution control device for a vehicle for controlling engaging force of a coupling mechanism so as to change transmission torque, thereby distributing driving force, said device comprising:

means for continuously changing a torque limiter which limits engaging force of said coupling mechanism, from a limiter value in an ordinary control state according to a driving state, to a limiter value in a specific control state at the time of mounting nonstandard-diameter tires; for protecting a driving force transmission system; and

means for controlling engaging force of said coupling mechanism so as to be kept below the limiter value of the torque limiter in every control state; and in said specific control state so as to keep below the limiter value in said specific control state

means for setting amount-of-change of the torque limiter per time increment at transition from the ordinary control state to the specific control state and amount-of-change of the torque limiter per time increment at recovery from the specific control state to the ordinary control state such that the latter may be relatively larger than the former.

2-6. (Canceled)

7. (New) A driving force distribution control device for a vehicle for controlling engaging force of a coupling mechanism so as to change transmission torque, thereby distributing driving force, said device comprising:

means for continuously changing a torque limiter, which limits engaging force of the coupling mechanism, from a limiter value in an ordinary control state according to a driving state to a limiter value in a specific control state at the time of having detected any abnormal increase in oil temperature in a driving force transmission system;

means for controlling engaging force of the coupling mechanism so as to be kept below

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the limiter value of the torque limiter in every control state; and

means for setting amount-of-change of the torque limiter per time increment at transition from the ordinary control state to the specific control state and amount-of-change of the torque limiter per time increment at recovery from the specific control state to the ordinary control state such that the former may be relatively larger than the latter.

8. (New) A driving force distribution control device for a vehicle for controlling engaging force of a coupling mechanism so as to change transmission torque, thereby distributing driving force, the device comprising:

means for continuously changing a torque limiter, which limits engaging force of the coupling mechanism, from a limiter value in an ordinary control state according to a driving state to a limiter value in a specific control state for protecting a driving force transmission system;

means for controlling engaging force of the coupling mechanism so as to be kept below the limiter value of the torque limiter in every control state; and

means for setting amount-of-change of the torque limiter per time increment at transition from the ordinary control state to the specific control state and amount-of-change of the torque limiter per time increment at recovery from the specific control state to the ordinary control state such that the former and the latter may be substantially equal at the low speed range of the vehicle.

9. (New) The driving force distribution control device of claim 1, wherein said device comprises:

a transfer control unit which includes said means for continuously changing said torque limiter, said means for controlling said engaging force, and said means for setting said amount-of-change of the torque limiter per time increment.

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10. (New) The driving force distribution control device of claim 9, wherein said transfer control unit receives a plurality of signals and calculates an instruction value for engaging torque based on said plurality of signals.

11. (New) The driving force distribution control device of claim 10, wherein said plurality of signals comprise at least one of a wheel speed sensor signal, throttle position sensor signal, brake switch signal, hand brake switch signal, lateral acceleration sensor signal and oil temperature sensor signal.

12. (New) The driving force distribution control device of claim 11, wherein in said specific control state, said transfer control unit confirms whether a present value of said torque limiter exceeds a maximal value of an allowed torque value in said specific control state.

13. (New) The driving force distribution control device of claim 12, wherein in the event that a present value of said torque limiter exceeds the maximal value of the allowed torque in the specific control state, said transfer control unit gradually reduces the value of said torque limiter by subtracting a constant A1 from the present value of said torque limiter.

14. (New) The driving force distribution control device of claim 13, wherein in the event of transition from the specific control state to an ordinary control state, said transfer control unit gradually increases the value of said torque limiter to the maximal value of the torque limiter in the ordinary control state by adding a constant A2 to the present value of the torque limiter.